

SCIENCE (GCSE)

ROUTES THROUGH SCIENCE

The National Curriculum requires all students to study Science covering core aspects of Biology, Chemistry and Physics. We offer two routes at Newcastle Academy; Combined Science, where students study a balance of Biology, Chemistry and Physics to obtain 2 GCSEs in Science and Separate Sciences where students study a GCSE in each of Biology, Chemistry and Physics.

Both routes provide a solid basis for further study in Science. Colleges and Sixth Forms accept both Combined Science and Triple Sciences for their A-level courses, however in either case it is important to achieve a higher grade.

In both routes students are entered for either Foundation or Higher examinations. Foundation covers grades 1 to 5 and Higher for grades 4 to 9. Tier of entry is decided in Y11 and is based upon assessments over the course.

All students who do not choose Separate Sciences will follow the Combined Science route.

COMBINED SCIENCE

Combined Science is a two GCSE sized (double award) qualification covering the three science disciplines of Biology, Chemistry and Physics. Students are awarded a double grade based on their overall performance across these three disciplines. These may be the same grade such as 7, 7 or may be an intermediate grade such as 7, 6.

Combined Science students will sit six exams at the end of the course as shown here. The exams are equally weighted.

Biology Paper 1 1 hour 15 minutes 70 Marks	Chemistry Paper 1 1 hour 15 minutes 70 Marks	Physics Paper 1 1 hour 15 minutes 70 Marks
Biology Paper 2 1 hour 15 minutes 70 Marks	Chemistry Paper 2 1 hour 15 minutes 70 Marks	Physics Paper 2 1 hour 15 minutes 70 Marks
Double Award (2 GCSEs) in Science		

We are following the AQA GCSE Combined Science: Trilogy course which is the most popular Science GCSE in England. There is a strong emphasis on practical science investigation skills including completion of required practical that all students must carry out. Knowledge and skills in scientific investigation are assessed within the exams. Students are also expected to cover a broad range of

scientific knowledge and understanding as well as being able to apply numeracy and literacy skills in scientific contexts.

Topics covered are given below.

Biology	Chemistry	Physics
1. Cell biology 2. Organisation 3. Infection and response 4. Bioenergetics 5. Homeostasis and response 6. Inheritance, variation and evolution 7. Ecology	8. Atomic structure and the periodic table 9. Bonding, structure, and the properties of matter 10. Quantitative chemistry 11. Chemical changes 12. Energy changes 13. The rate and extent of chemical change 14. Organic chemistry 15. Chemical analysis 16. Chemistry of the atmosphere 17. Using resources	18. Energy 19. Electricity 20. Particle model of matter 21. Atomic structure 22. Forces 23. Waves 24. Magnetism and electromagnetism

At the end of Year 11, many students will finish their studies on science. These students will have gained valuable GCSEs in science. As with all STEM subjects these are highly valued by employers, who view good GCSE grades in Science as an indication that a person has mastered a challenging discipline. Of course, for some careers, having GCSEs in science subjects is either very useful, or in some cases, compulsory.

A good proportion of students enjoy their sciences at GCSE so much that they go on to study science at A Level or BTEC Level 3. This may lead them into a career straight from school, where their science qualifications are again very impressive; or it may lead them into a variety of university courses, either science or non-science based.